



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,705	12/11/2000	Shinji Koyano	Q62174	2917

7590 11/21/2002

SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

GRIER, LAURA A

ART UNIT	PAPER NUMBER
----------	--------------

2644

DATE MAILED: 11/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,705

Applicant(s)

KOYANO ET AL.

Examiner

Laura A Grier

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 8, 11, 13, 15 and 17 is/are rejected.
- 7) ☒ Claim(s) 2-7, 9-10, 12, 14, and 16 is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

Art Unit: 2644

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 rejected under 35 U.S.C. 102(b) as being anticipated by Hayase.

Regarding **claim 1**, Hayase disclose a bass enhancing device for a loudspeaker system. Hayase's disclosure comprise a loudspeaker (2), a vibration detecting means (4) for detecting the vibrations (amplitude) of the speaker unit, eventhough the detecting means is directly coupled to the passive radiator, is inherently evident that the detecting means detects motion characteristics from the speaker unit structure as well as the radiator as supported in col. 3, lines 56-68 and a feedback circuit indicative of positive feedback (figure 1 and col. 4, lines 33-59) of the detected current of the speaker unit to an amplifier.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2644

4. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Noro et al.

Regarding **claim 1**, Noro et al. discloses an impedance compensation circuit in a speaker driving system. Noro discloses a speaker (figure 1-reference 3), which reads on a speaker; a detection element (figure 1-reference 1); and a feedback circuit coupled with an adder for positively feeding back an output to the amplifier to drive the speaker (col. 3, lines 33-36), which reads on a positive feed back means. However, Noro's detection element fails to specifically disclose detecting an amplitude value of a diaphragm of the speaker. The examiner maintains takes official notice that such a detecting means was well known in the art.

Regarding the amplitude detecting means, a sensor and/or other detecting means are commonly used in the art for detecting various motional characteristics, such as vibrations, amplitude, velocity, etc., of a loudspeaker.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Noro by implementing a means for detecting amplitude vibrations of a loudspeaker for the purpose of lessening unwanted distortions that may destroy the loudspeaker, and its audio output, wherein detection of amplitude of a loudspeaker is commonly used technique in the art.

5. **Claims 8, 11, 13, and 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Noro.

Regarding **claim 8, 11, 13, and 15**, Noro et al. discloses an impedance

Art Unit: 2644

compensation circuit in a speaker driving system. Noro discloses a speaker (figure 1-reference 3), which reads on a speaker; a detection element (figure 1-reference 1); and a feedback circuit coupled with an adder for positively feeding back an output to the amplifier to drive the speaker (col. 3, lines 33-36), which reads on a positive feed back means; and Noro further discloses an integrator, indicative of the integrating means, wherein integrators or integrating means are to include a low pass filter. However, Noro's detection element fails to specifically disclose detecting an amplitude value of a diaphragm of the speaker. The examiner maintains takes official notice that such a detecting means was well known in the art.

Regarding the amplitude detecting means, a sensor and/or other detecting means are commonly used in the art for detecting various motional characteristics, such as vibrations, amplitude, velocity, etc., of a loudspeaker.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Noro by implementing a means for detecting amplitude vibrations of a loudspeaker for the purpose of lessening unwanted distortions that may destroy the loudspeaker, and its audio output, wherein detection of amplitude of a loudspeaker is commonly used technique in the art.

Allowable Subject Matter

6. **Claims 5-7** are allowed.

Art Unit: 2644

7. **Claims 2-4, 9-10, 12, 14, and 16 and 17** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

The applicant basically argues that references of prior art fails to teach the claimed invention, solely and/or combined, specifically providing feedback amplitude detection of a loudspeaker in a positive manner. The examiner has provided another Office action with a modified rejection of previously used references Noro and Hayaqse, respectively. In respect to Hayase, the invention does indicate that the detector of Hayase is located on the passive radiator, however, there is implicit indication that the detector may also detect vibration of the speaker unit as well.

Citation of Pertinent Art

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Booneville, U. S. Patent No. 5729611, discloses a loudspeaker overload protection.

Daniels, U. S. Patent No. 5418860, discloses a voice coil excursion and amplitude gain control device.

Art Unit: 2644

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

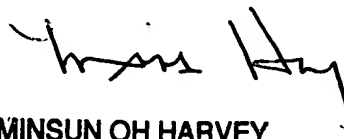
Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

LAG 
November 18, 2002


MINSUN OH HARVEY
PRIMARY EXAMINER